

### **ABSTRACT OF THE DISCLOSURE**

There are described processes and apparatus for the separation of components from a mixture of components in a fluid such as biological materials in a fermentation broth or other biomass product. The fluid mixture is passed through a plurality of individual separation modules which are in sequential fluid communication, at least one of which can be isolated from the other(s). The individual separation modules include chemically active capture materials which are capable of capturing desired components from the mixture. The chemically active capture material of each individual separation module may have the same chemical activity or the chemically active capture material of at least one separation module may have a different chemical activity than that of the capture material of the other separation module(s).